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Recognition for Research

University of Dayton, Ohio (url: http://www.udayton.edu/index.php)

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A University of Dayton researcher has earned recognition from an international society.

The SPIE, an international society advancing the science and application of light, named physics and electro-optics professor Peter Powers a fellow of the society.

SPIE promoted 67 of its members this month to fellows, members of distinction who have made significant scientific and technical contributions in the multidisciplinary fields of optics, photonics and imaging. In 55 years, fewer than 900 people worldwide have been named fellows by the 17,000-member organization.

"The annual recognition of fellows provides an opportunity for us to acknowledge Members for their outstanding technical contributions and service to SPIE," SPIE president Katarina Svanberg said.

Powers has received notable recognition for his research in electro-optics, through scholarly papers in more than 40 publications, five patents, conference presentations and external funding as well as major faculty awards for scholarship at both the college and the university levels. He plans to publish a book on non-linear optics later this year.

In 2010, he was appointed as the Brother Leonard A. Mann, S.M., Chair in the Sciences.

"My work in non-linear optics focuses on frequency conversion — changing the color of light," Powers said. "This has a host of applications."

Powers' primary research application is in remote sensing, obtaining information about a substance by sending a laser beam through it and measuring its changes. One useful application is gas leak detection. The frequency of a laser is converted to one absorbed by a gas such as methane, the primary component of natural gas. By imaging an area with this laser, one can identify any leaks.

He is also conducting research in the terahertz spectral region, which can be used to look through certain types of objects such as paints and plastics. Applications include aircraft inspection, explosive detection and biomedical imaging.

SPIE is the international society for optics and photonics founded in 1955 to advance light-based technologies. Serving more than 180,000 constituents from 168 countries, the Society advances emerging technologies through interdisciplinary information exchange, continuing education, publications, patent precedent, and career and professional growth.

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